

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 4304

Roll No.

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**B.Tech.**

(SEM. II) EVEN THEORY EXAMINATION 2012-13

**MANUFACTURING PROCESSES**

*Time : 2 Hours*

*Total Marks : 50*

**SECTION—A**

1. Attempt **all** questions. All questions carry equal marks.

(5×2=10)

- (a) Differentiate between creep and fatigue failures.
- (b) Write a short note on brittle fractures.
- (c) What are various classifications of steel ?
- (d) Briefly explain gas welding process.
- (e) What are the objectives of tempering ?

**SECTION—B**

2. Attempt any **three** questions. All questions carry equal marks.

(5×3=15)

- (a) Briefly discuss the characteristics of a ductile fracture.
- (b) What are alloy steels ? Discuss the importance of any five alloying elements used in steels.
- (c) Define rolling process. Using schematic diagrams and state the differences between cluster mills and continuous rolling.
- (d) Explain the purpose of galvanizing. Discuss the hot dip galvanizing process.
- (e) What is composite material ? Discuss their types along with their relative importance over conventional materials.

### SECTION—C

3. Attempt any **one** of the following : (5×1=5)
- (a) With neat diagrams explain full annealing and process annealing.
  - (b) Describe the process of steel hardening. Why steels are required to be tempered after it has been hardened ?
4. Attempt any **one** of the following : (5×1=5)
- (a) What is extrusion ? Differentiate between forward and backward extrusion process with suitable sketches.
  - (b) What is a pattern ? Explain various allowances provided in pattern making and the reasons for it.
5. Attempt any **one** of the following : (5×1=5)
- (a) Explain the following drilling operations :
    - (i) Countersinking
    - (ii) Reaming
    - (iii) Tapping
    - (iv) Counter boring.
  - (b) Describe at least three methods of taper turning on a centre lathe.
6. Attempt any **one** of the following : (5×1=5)
- (a) Explain the working principle of resistance welding. Briefly discuss the advantages and disadvantages of it.
  - (b) What do you mean by plant layout ? Discuss its objectives and advantages.
7. Attempt any **one** of the following : (5×1=5)
- (a) Write a brief note on cement indicating its properties and applications.
  - (b) Explain the following with neat sketches :
    - (i) Extrusion moulding
    - (ii) Blow moulding.